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The instant invention concerns a general ventilation device, and in particular a ventilation device for a vehicle.

From the EP-A-0 663,309 is one would genericin accordance with-eat ventilation device with the features of the preamble of Claim 1 known. In particular the known ventilation device, which in particular for a vehicle suitable is, covers at least an air accelerator, a Frischluftkanal with an optional evaporator, an heat exchanger, a mixing chamber, a duct, the air of the Frischluftkanal and/or. the evaporator to the heat exchanger leads, a duct, the air of the evaporator to the mixing chamber leads, and a duct, the air of the heat exchanger to the mixing chamber leads, whereby at least a duct an air flow expensive means is associated.

With the known, here described device a first mixing chamber becomes keeping at a moderate temperature the front area of the vehicle proposed, both with fresh air or with incorporated evaporator with more dried and/or. cooled air and with heated air applied will can. The heated air provided becomes by means of flowing through an heat exchanger. The other an other mixing chamber becomes proposed with the known device, which can serve for keeping at a moderate temperature the rear area. This other mixing chamber can become with air applied, which is present before the passage and after the passage of the heat exchanger, the bottom premiss that the adjustment concerning the ventilation of the front area this allowed.

From the DE 41 19 474 an other is ventilation device known, is provided with which a mixing chamber, which is subjectable with air, either more immediate from an evaporator stepping, or bottom interposition of an heat exchanger. In order to cause a favourable mixture of the two air flows, lamella-like formed air flow expensive means are provided. Keeping at a moderate temperature or airconditioning of different zones of the vehicle air can become the floor space or the remainder of the passenger compartment discharged from the mixing chamber.

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Known ventilation devices make thus a general airconditioning possible of zones and/or. a keeping at a moderate temperature of ventilation-planar or - sectors, whereby however the adjustment possibilities as well as the achievable temperature differences between different expenditure places are not satisfactory.

It is therefore object of the instant invention, one would genericin accordance with-eat like described above ventilation device in such a manner to train further that for the user a significant comfort improvement exists, provided in particular by an improved adjustment possibility of the single air flows which can be spent to the passenger compartment.

This object with a ventilation device with the features of the claim 1 dissolved becomes according to invention. Preferable embodiments of the invention are in the dependent claims defined.

The ventilation device, in particular for a vehicle with at least an air accelerator, draws according to invention for a Frischluftkanal with an optional evaporator, an heat exchanger, a mixing chamber, a duct, the air of the Frischluftkanal and/or. the evaporator to the heat exchanger leads, a duct, the air of the Frischluftkanal and/or. the evaporator to the mixing chamber leads, and a duct, the air from the heat exchanger to the mixing chamber it implements, whereby at least a duct an air flow expensive means is associated, thus that the heat exchanger a mechanism is downstream, which educates at least two from each other separate and/or insulated ducts, who lead to respective mixing chambers. Therefore a discrete division of the warm air standing after the heat exchanger for the order becomes achieved with the solution according to invention. By the discrete division of the warm air an comfort-optimized improved application single mixing chambers can become achieved. It should become mentioned that the term "mixing chamber" only any space used herein certain, in that air flows with different temperatures and/or moisture contents combined with one another become; this can take place also only in the actual passenger compartment, so that also this at least in the zone standing in question and/or. the range as mixing chamber, standing in question, to understand is.

Favourable way becomes the air flow after the heat exchanger the corresponding number of the ventilation-planar which can be supplied or - sectors for a corresponding keeping at a moderate temperature and/or. Airconditioning divided. Differently expressed can define those the heat exchanger downstream mechanism at least three, in particular four or

more ducts. Accordingly an arbitrary number at locations in the vehicle selective with heated in each case air over in each case a discrete duct can become, if necessary bottom admixture of more dried or fresh air applied.

With a preferable embodiment forms for the Frischluftkanal and/or. the evaporator downstream mechanism at least a duct to the application of the heat exchanger and at least two from each other separate and/or the insulated heat exchanger immediate ducts, who lead to respective mixing chambers. At least two discrete fresh air paths achieved, the z become corresponding with this embodiment by the bypass passages. B. to subject know from each other an independent respective mixing chamber. By planning from each other separate and/or. insulated ducts for fresh air, cooled air or also dried air a still other comfort improvement for the user achieved can become, there a respective mixing chamber and/or. a respective or zone adjustable and selective with a desired amount at heated air and at fresh air applied, which can be kept at a moderate temperature which can be air-conditioned, will can.

Favourable way becomes the fresh air and/or. the air in such, present after the evaporator, a manner divided that an application of the heat exchanger is possible, bottom formation of a number at from each other separate and/or. discrete or insulated ducts, the corresponding number of the ventilation-planar which can be supplied and/or. Sectors and/or. for a corresponding keeping at a moderate temperature and/or. Airconditioning. Differently expressed defined those the Frischluftkanal and/or. the evaporator downstream mechanism at least three, in particular four or more the heat exchanger immediate ducts. Accordingly a discrete duct, who heat exchangers going around, a respective mixing chamber supplied to become, can become in order with a portion of warm air from one of the discrete ducts blended if necessary there in each case.

In order to make the air flow possible in or several that insulated and/or separate present ducts, provided can be into or the several ducts an air flow expensive means. Such air flow expensive means can cover among other things flaps, shades, segments, drums and films, as it is common the person skilled in the art. An air flow expensive means can be with the instant invention both in such a manner provided that only the duct standing in question, z. B. cross section-moderate, affected become, however also in such a manner that a certain interaction exists to other ducts, z. B. in the form of an adjustable flap, between two ducts present.

With a preferable embodiment the heat exchanger an air flow expensive means is associated, in particular upstream. By making this air flow expensive means available the heating power altogether standing for the order can become selective set.

At least one of the mechanisms, D. h. the Frischluftkanal and/or. the evaporator, a wall should cover downstream or the heat exchanger downstream, in particular in flow direction essentially extend to the separation or insulation. With a simple embodiment this wall will be present as rigid member between ducts.

With one in particular preferable embodiment becomes at least one of the mechanisms the present in each case air proportionately, in particular more adjustable proportionately, on which affected in each case ducts distribute. For this purpose z could. B. the before mentioned wall displaceable a formed its or also flap exhibit. If thus z. B. those heat exchangers downstream mechanism so formed is that the present in each case air proportionately, in particular more adjustable proportionately, on which affected in each case ducts distributed can become, can become then the heating power provided of the heat exchanger in optimized manner for desired keeping at a moderate temperature exploited.

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At least one of the mechanisms can educate ducts with different cross section with a preferable embodiment, whereby the cross sections are more adjustable by air flow expensive means by means of the mechanism or also in particular. By adjusting and/or. Make available from different cross sections for the single discrete ducts will a particularly simple possibility indicated, in order to adjust the present in each case air flows independently or also with mutual relationship.

Favourable way are the evaporator and the heat exchanger in such a manner disposed that from the evaporator outgoing air can essentially step without deflection into the heat exchanger. By this appropriate arrangement flow losses become avoided, whereby also frequent arising problems of windage noises are practical eliminated.

Around z. B. during the warming-up phase of the internal combustion engine of the motor vehicle a satisfactory airconditioning to make available, covers the device according to invention favourable-proves an electric additional heating system, which is in particular the heat exchanger downstream.

If such an electric additional heating system, z. B. in the form of a PTC of heating element, provided is, should prefered those the heat exchanger downstream mechanism the additional heater downstream likewise be, in order to ensure a corresponding discrete division of the warm air standing for the order.

With an other preferable embodiment the evaporator and/or the heat exchanger a placing element is fluid lateral, in particular a cheque valve associated. In this manner a fluid-lateral control of the evaporator and/or heat exchanger can become achieved beside the air-lateral control. So separate can become exemplary with very high external temperatures over the placing element of the heat exchangers of the cool heating circle of the vehicle.

Finally it is prefered that at least one the mechanism of formed ducts with at least a duct communicated, downstream by those the heat exchanger, who serves for the proportionate warm air withdrawal. By making this additional warm air

withdrawal channel available a snow and ice removal of the windshield independent of the keeping at a moderate temperature attitude can become ensured.

Other advantages and features of the instant invention result from the subsequent detailed description of some pure more illustrative, at present preferable embodiments bottom reference on the accompanying designs, in which applies:

Fig. 1 shows a ventilation device in schematic, easy off center sectional view as a first preferable embodiment of the invention.

Fig. a simplified sectional view shows 2 by in Fig. 1 illustrated apparatus along the curved cutting plane A-A.

Fig. similar points 3 to Fig in a view. 1 a second preferable embodiment of the invention.

Fig. a simplified sectional view shows 4 along the curved plane B-B von Fig. 3.

Fig. 5 and 6 shows in each case schematic sectional views along the planes CC and dd von Fig. 3.

Fig. corresponding points 7 to Fig in a view. 1 a third preferable embodiment of the invention.

Fig. 8, 9 and 10 shows the Fig. 4, 5 and 6 corresponding sectional views in Fig. 7 illustrated embodiment.

Fig. 11 and 12 points other preferable embodiments of the invention in a view corresponding to Fig. 1.

Fig. still another other preferable embodiment points 13 in a view similar to Fig. 1.

Fig. 14 shows in Fig. 13 illustrated embodiment in supervision.

Fig. 15 shows into the Fig. 13 and 14 illustrated embodiment in a sectional view along the offset plane rear spar von Fig. 14.

In Fig. 1 is a sectional view by a ventilation device as preferable embodiment of the instant invention shown. The ventilation device shown is provided to the incorporation into a vehicle and covers an air accelerator 2 in the form of a blower. The air accelerator 2 an applied Frischluftkanal 1, which leads the applied air across an optional evaporator 4 to a duct 10. In the duct 10 present air can subject a downstream heat exchanger to the evaporator 4. Beside the application of the heat exchanger 6 the duct 10 in two bypass passages 12, 14, which go around the heat exchanger 6, flows. For this purpose the heat exchanger 6 supporting walls serve 7, 8, those with outer walls of the housing the before mentioned bypass passages 12, 14 define. The rear heat exchanger 6 becomes the air outgoing from the heat exchanger by a wall 24 divided, so that two Warmluftkanäle become 16 and 18 formed. The so generated warm air component currents in the ducts 16 and 18 can in each case with an air flow from the duct 12 and/or. 14, the heat exchanger going around, combined and/or. mixed become. In order to make a respective dosage possible from warm and cool air stream to, 18 and a duct is 12, 14 air flow expensive means 20, 22 provided between in each case a Warmluftkanal 16. In the illustrated embodiment the air flow expensive means are 20, 22 formed, which can affect in each case flow areas of the ducts 12, in the form of flap elements, 14, 16, 18. In the illustrated embodiment the flap is 20 for the upper air discharge opening over a linking 20a at the wall 7 pivotal hinged. In corresponding manner the flap is 22 over an hinge 22a at the wall 8a hinged. Although in the illustrated embodiment the air flow expensive means are 20, 22 shown as single flaps, the person skilled in the art should recognize that also a respective double flap arrangement can come to the use, so that is given for each duct a complete independent air flow price increase. In particular thus the cross section of each duct 12, 14, 16, 18 complete can be adjusted independently.

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In Fig. 2 is simplified and a schematic sectional view along the curved plane A-A von Fig. 1 shown. Like it itself from the illustration of Fig. 2 results in, stand vehicle-laterally or also for an intermediate mixing chamber discrete in each case ducts 12, 14 for fresh air and/or. cooled or dried air and discrete in each case ducts 16, 18 for heated air ready. Between the two Warmluftkanälen 16, 18 essentially the partition 24 extending in flow direction is present. Between the Warmluftkanal 16 and the Frischluftkanal 12 the air flow expensive means 20 is present, which as a flap formed can be exemplary. After the flap is 20 pivotally supported, the cross section of a duct can in favor of the other affected duct enlarged or reduced become. Therefore a desired combination at cold air and warm air for the upper outlet can become provided.

Alternate one could be the air flow expensive means 20 however also in the form of a double flap provided, so that itself in the illustration of Fig. 2 with operation of the air flow expensive means 20 the width of these to change can do, so that a complete independent adjustment of the light cross sections becomes 16 ensured concerning the ducts 12 and.

The person skilled in the art will recognize the fact that a corresponding design of the air flow expensive means is 22 possible so that herein more other in the detail does not have to be entered.

In Fig. 3 is a second preferable embodiment schematic in sectional view shown, whereby the sectional view in a plane made, easy from the center offset to the observer. As in Fig. 1 illustrated embodiment, covers the ventilation device an air accelerator 2, a Frischluftkanal with an optional evaporator the applied represented here. The Frischluftkanal 1 and/or. the evaporator 4 flow into a duct 10, to that, as with into Fig. 1 illustrated embodiment, an heat exchanger 6 to subject knows. Differently than with in Fig. , however this duct 10 flows to 1 illustrated embodiment reciprocally in each case the heat exchanger 6 in two ducts 12, 13 and/or. 14, 15, which are 29 from each other separate by means of partitions 26. Differently expressed becomes the air from the Frischluftkanal and/or. after the heat exchanger 4 into five air flows divided, an air flow, which the heat exchanger of 6 applied, and four air flows, which go around the heat exchanger 6, by becoming 15 guided in ducts 12, 13, 14. The air flow led by the heat exchanger 6 becomes divided after the heat exchanger 6 over wall portions 24, 25, 27, 28 into four partial air flows. In that illustrated embodiment are the wall portions 27, 28 and 24, 25 integral in each case formed as a wall here, whereby the wall portions form altogether an essentially vertical cross. 24, 25, 27, 28 four from each other separate become corresponding and/or by the wall portions. insulated ducts 16, 17, 18, 19 defined. Each warm air current, in one of the ducts 16, 17, 18, 19 present, can become subsequent groove air in each case from one of the ducts 12, 13, 14, 15 mixed, so that four different air-conditioning zones are provided. As is the case for in Fig. 1 illustrated embodiment is in each case a pair made of Frischluftkanal and Warmluftkanal an air flow expensive means 20, 21, 22, 23 associated. Like preceding bottom reference on Fig. 1 stated, the air flow expensive means 20, 21, 22, 23 can be both and simple flaps formed to steer over the respective air flows of a pair from ducts to or in the form of separate mechanisms, z. B. in the form of a double flap, the one individual adjustment of each single channel permitted.

In Fig. 4 is a sectional view along the curved plane B-B von Fig. 3 shown. In this view shown two upper Frischluftkanäle are 12, 13, two upper Warmluftkanäle of 16, 17, two lower Warmluftkanäle of 18, 19 and two lower Frischluftkanäle 14, 15. The two upper Frischluftkanäle 12, 13 become from each other separate over the wall portion 26 in vertical direction. Corresponding ones become the two lower Frischluftkanäle 14, 16 by the wall portion 29 separate. In the illustrated embodiment the wall portions are 26, 29, like also the wall portions 24, 25, which form a partition in each case, between the Warmluftkanälen 17, 19 formed as rigid members and/or. 16, 18. Like already mentioned, in each case a pair of Frischluftkanal and Warmluftkanal becomes from each other separate, whereby the separation present over simple flaps 20, 21, 22, 23 made. Like preceding already discussed, the respective flaps or the single flaps could be 20, 21, 22, 23 also as double flaps formed, in order to make an independent in each case adjustment possible of the cross section of each duct 12, 13, 14, 15, 16, 17, 18, 19. In each case the person skilled in the art will recognize that becomes possible with that illustrated embodiment a self-sufficient flowtechnical keeping at a moderate temperature or air conditioning control of four zones or ranges which can be ventilated here, whereby it is possible that no interaction between the single ranges which can be kept at a moderate temperature is essentially present.

In Fig. 5 is a sectional view along the plane CC von Fig. 3 shown. As it is to be recognized significant, a part of the air present after the evaporator 4 becomes 7 guided above a wall portion, 6 mounted at whose underside of the heat exchangers is. This part of the air flow becomes 13 divided over the wall section 26 into two ducts 12, whereby each duct by means of in each case a flap 20 and/or. 21 cross section-moderate is more adjustable. For this purpose, like preceding already mentioned, everyone of the flaps 20, 21 is pivotal over an hinge 20a and/or. 21a with the wall portion 7 connected.

Fig. an other sectional view shows 6 by in Fig. 3 illustrated embodiment the corresponding plane of dd. As results from this
▲ top sectional view, a part of the air will subject and will penetrate the heat exchanger 6 after the evaporator 4, in order to become into four from each other independent ducts divided. In the illustration of Fig. 6 are the wall sections 24, 25 shown, those the lower limitation of the upper Warmluftkanäle 16, 17 define. The two Warmluftkanäle 16, 17 are, like shown, by the rigid wall section 27 from each other separate and/or. insulated.

In Fig. 7 is an other preferable embodiment in a representation method similar to Fig. 3 shown. Similar components are provided with corresponding numerals and do not become the scarcer illustration not again herein in the detail described. As mentioned corresponds in Fig. 7 illustrated embodiment essentially in Fig. 3 shown, whereby however the rigid walls 24, 25, 26, 27, 28, 29 in Fig. 3 illustrated embodiment with additional air flow expensive means provided are. In particular the respective walls of pivotal intended portions exhibit, which are over respective hinges 24a, 25a, 26a, 27a, 28a, 29a hinged. The single movable wall sections are altogether so provided that a mutual obstruction cannot occur. So the input muzzle range of the ducts can become exemplary 12, 13 concerning the vertical partition 26 adjusted, while the horizontal longitudinal partitions are 20, 21 provided in the form of flaps in the output muzzle range. Also the warm air duct system formed by the wall portions 24, 25, 27, 28 can be with corresponding, independently operable air flow expensive means provided. As can exemplarily and as from Fig. 10 the apparent front portion of the wall 27 formed articulated over an hinge 27a its, while the wall sections are 24, 25 at that the heat exchanger opposite end with air flow expensive means provided. The person skilled in the art becomes on the basis the sectional views of the Fig. 9 and 10, in each case the corresponding cutting planes FF and G-G von Fig. 7 to infer can that an independent in each case operation of single groups of air flow expensive means and thus of ducts, like also a single, independent operation of alternate air flow expensive means, z. B. in the form from double flaps, lamellas or such, for respective ducts possible is.

Therefore arises in in Fig. 8 represented sectional view, essentially in Fig. 4 illustration shown corresponding that the single wall sections 20 to 29 a respective interference of the defined ducts 12, 13, 14, 15, 16, 17, 18, 19 possible, as by the respective arrows indicated. It should become here again mentioned that an adjusting possibility can affect two ducts dependent from each other. Alternate and in particular prefered should be able to affect however each air flow expensive means a respective duct independent standing in question of other ducts and/or air flow expensive means.

In Fig. 11 is an other embodiment of the ventilation device according to invention shown, essentially in Fig. 1 illustrated embodiment corresponding, whereby however the additional heat exchanger 6 is an air flow expensive means 38

upstream. In the illustrated embodiment the air flow expensive means is 38 formed, so that the portion of air, in the form of pivotal lamellas, which can become the heat exchanger applied, at the input side controlled.

In Fig. 12 is still another other embodiment shown, essentially in Fig. 1 illustrated embodiment corresponding, whereby the heat exchanger an additional electric heater 40, z. B. in the form of a PTC of heater downstream is. Like shown, the wall 24, those separate from each other present Warmluftkanäle 16, begins those 18 defined, the rear additional heating element 40. A division of the warm air, independent of it finds corresponding whether the air became 40 heated by means of the heat exchanger 6 or the additional heating system.

In Fig. 13 is finally an other preferable embodiment of the invention in sectional view shown, whereby this embodiment essentially a development in Fig. 3 illustrated embodiment is, whereby the cutting plane in Fig. 13 illustrated embodiment likewise central easy offset is, however with reference to the center away from the observer offset. In Fig. 13 illustrated embodiment differs considerably thereby from in Fig. 3 illustrated embodiment that respective ducts are 34, 36 32 formed by walls 30. In each case a duct 34, 36 serves z for the proportionate warm air withdrawal. B. to the use with the snow and ice removal and/or. Defrostung of the windshield. Therefore this embodiment makes safety-relevant the advantage available that independent warm ones proportionate of a user attitude concerning keeping at a moderate temperature the vehicle interior defrosting used can become.

Fig. 14 shows in Fig. 13 illustrated embodiment in supervision. With this embodiment the ducts branching from the Warmluftkanälen become 34, 36, 35, 37 in pairs in each case summarized and reciprocally the ventilation device upward guided. As an additional feature the heat exchanger is that here illustrated embodiment with a control valve 50 provided, by means of which beside the flowtechnical control or also inhibition achieved becomes.

Fig. 15 shows into the Fig. 13 and 14 illustrated embodiment in a sectional view the corresponding offset plane rear spar von Fig. 14. Beside the preceding components described in the detail is in Fig. 15 an air flow expensive means 39 shown, which steer the branch of warm air and/or. to regulate can. Otherwise can with reference to Fig. 3 made description on those here illustrated embodiment transmitted become.

Although the instant invention became preceding reference bottom in the detail on some preferable embodiments described, the person skilled in the art should recognize that most diverse changes and modifications are in the frame of the accompanying claims possible. In particular the person skilled in the art will recognize that single features of an embodiment with arbitrary features of other embodiments combined to become to be able. Furthermore the person skilled in the art should recognize the fact that, although in the foregoing description considerably on flaps as air flow expensive means was entered likewise also different air flow expensive means, z. B. into lamella form, films or such a thing, to the use to come can, both to the common interference of several ducts and like prefered to the individual interference of a single channel, in particular a respective single channel.

It can recapitulatory be stated that with the solution according to invention a separate tax or controllable keeping at a moderate temperature of ventilation-planar or - sectors in a vehicle bottom significant comfort improvement achieved will can. In particular arbitrary temperature differences at different expenditure places can become achieved, since independent in each case discrete ducts for warm air and fresh air arbitrary the corresponding requests of the user in such a manner set to become to be able that the desired air amount, temperature and humidity are present.

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1. Ventilation device, inbesondere for a vehicle, with at least an air accelerator (2), a Frischluftkanal (1) with an optional evaporator (4), an heat exchanger (6), a mixing chamber, a duct (10), the air of the Frischluftkanal (1) and/or. the evaporator (4) to the heat exchanger (6) leads, a duct (12, 13, 14, 15), the air of the Frischluftkanal (1) and/or. the evaporator (4) to the mixing chamber it leads and a duct (16, 17, 18, 19), the air of the heat exchanger (6) to the mixing chamber, whereby at least a duct (10, 12, 13, 4, 15, 16, 17, 18, 19) air flow control means (20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32) are associated, characterised in that the heat exchanger (6) leads a mechanism (20, 21, 22, 23, 24, 25, 27, 28) downstream is, those at least two from each other separate and/or insulated ducts (16, 17; 16, 18; 16, 19; 17, 18; 17, 19; 18, 19) forms, which lead to respective mixing chambers.

2. Ventilation device according to claim 1, characterised in that those the heat exchanger (6) downstream mechanism (20, 21, 22, 23, 24, 25, 27, 28) at least three, in particular four or more ducts (16, 17, 18, 19) defined.

3. Ventilation device according to claim 1 or 2, characterised in that the Frischluftkanal (1) and/or. the evaporator (4) downstream mechanism (6, 7, 8, 26, 29) a duct (10) to the application of the heat exchanger (6) and at least two from each other separate and/or insulated, the heat exchanger (of 6) immediate ducts (12, 13; 12, 14, 12, 15; 13, 14; 13, 15; 14, 15) forms, which lead to respective mixing chambers.

4. Ventilation device according to claim 3, characterised in that those the Frischluftkanal (1) and/or. the evaporator (4) downstream mechanism (6, 7, 8, 26, 29) at least three, in particular four or more, the heat exchanger (of 6) immediate ducts (12, 13, 14, 15) defined.

5. Ventilation device after one of the preceding claims, characterised in that at least an insulated and/or separate present duct (12, 13, 14, 15, 16, 17, 18, 19) air flow control means (20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 38) contains.

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6. Ventilation device after one of the preceding claims, characterised in that the heat exchanger (6) air flow control means (38) associated, in particular upstream is.

7. Ventilation device after one of the preceding claims, characterised in that at least one of the mechanisms (20, 21, 22, 23, 24, 25, 27, 28; 6, 7, 8, 26, 29) at least a wall covers itself, in particular essentially in flow direction the extended.

8. Ventilation device after one of the preceding claims, characterised in that at least one of the mechanisms (20, 21, 22, 23, 24, 25, 27, 28; 6, 7, 8, 26, 29) the present in each case air proportionately, in particular more adjustable proportionately, on the affected in each case ducts (10, 12, 13, 14, 15, 16, 17, 18, 19) distributed.

9. Ventilation device after one of the preceding.claims, characterised in that at least one of the mechanisms (20, 21, 22, 23, 24, 25, 27, 28;) ducts (10, 12, 13, 14, 15, 16, 17, 18, 19) with different cross section forms 6, 7, 8, 26, 29, whereby in particular the cross sections by means of the mechanism (20, 21, 22, 23, 24, 25, 27, 28; 6, 7, 8, 26, 29) is more adjustable.

10. Ventilation device after one of the preceding claims, characterised in that of the evaporators (4) and the heat exchanger (6) in such a manner disposed are that from the evaporator (4) outgoing air can essentially step without deflection into the heat exchanger (6).

11. Ventilation device after one of the preceding claims, characterised in that the heat exchanger (6) an electric additional heating system (40) associated, in particular downstream is.

12. Ventilation device according to claim 11, characterised in that those the heat exchanger downstream mechanism (20, 21, 22, 23, 24, 25, 27, 28) of the additional heater (40) downstream is.

13. Ventilation device after one of the preceding claims, since by characterized that the evaporator (4) and/or the heat exchanger (6) a placing element (50) is fluid lateral, in particular a cheque valve (50), associated.

14. Ventilation device after one of the preceding claims, characterised in that at least one the mechanism downstream by those the heat exchanger (20-28; 6, 7, 8, 26, 29) formed ducts (12-19) with at least a duct (34, 35, 36, 37) communicated, who serves for the proportionate warm air withdrawal.